r.p.m. = 265[√25.4×r.c.f./d]

Where:
r.c.f. = Relative centrifugal force, and
d = Diameter of swing, in millimeters, measured between tips of opposing tubes when in rotating position.

Table VI shows the relationship between diameter, swing, relative centrifugal force (r.c.f.), and revolutions per minute.

TABLE VI—ROTATION SPEEDS FOR CENTRIFUGES OF VARIOUS DIAMETERS

Diameter of swing in millimeters[a]	r.p.m. at 600 r.c.f	r.p.m. at 700 r.c.f.
483	1490	1610
508	1450	1570
533	1420	1530
559	1390	1500

[a] Measured in millimeters between tips of opposite tubes when in rotating position.

S7.5.2 *Procedure*. Balance the corked centrifuge tubes with their respective trunnion cups in pairs by weight on a scale, according to the centrifuge manufacturer's instructions, and place them on opposite sides of the centrifuge head. Use a dummy assembly when one sample is tested. Then whirl them for 10 minutes, at a rate sufficient to produce a r.c.f. between 600 and 700 at the tips of the whirling tubes. Repeat until the volume of sediment in each tube remains constant for three consecutive readings.

S7.5.3 *Calculation*. Read the volume of the solid sediment at the bottom of the centrifuge tube and report the percent sediment by volume. Where replicate determinations are specified, report the average value.

S7.6 *Standard styrene-butadiene rubber (SBR) brake cups*. SBR brake cups for testing motor vehicle brake fluids shall be manufactured using the following formulation:

FORMULATION OF RUBBER COMPOUND

Ingredient	Parts by weight
SBR type 1503[a]	100
Oil furnace black (NBS 378)	40
Zinc oxide (NBS 370)	5
Sulfur (NBS 371)	0.25
Stearic Acid (NBS 372)	1
n-tertiary butyl-2-benzothiazole sulfenamide (NBS 384)	1
Symmetrical dibetanaphthyl-p-phenylenediamine	1.5
Dicumyl peroxide (40 percent on precipitated $CaCO_3$)[b]	4.5
Total	153.25

[a] Philprene 1503 has been found suitable.

[b] Use only within 90 days of manufacture and store at temperature below 27 °C. (80 °F.).

NOTE: The ingredients labeled (NBS) must have properties identical with those supplied by the National Bureau of Standards.

Compounding, vulcanization, physical properties, size of the finished cups, and other details shall be as specified in appendix B of SAE J1703b. The cups shall be used in testing brake fluids either within 6 months from date of manufacture when stored at room temperature below 30 °C. (86 °F.) or within 36 months from date of manufacture when stored at temperatures below minus 15 °C. (+5 °F.). After removal of cups from refrigeration they shall be conditioned base down on a flat surface for at least 12 hours at room temperature in order to allow cups to reach their true configuration before measurement.

S7.7 *Isopropanol*. ACS or reagent grade.

[36 FR 22902, Dec. 2, 1971]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §571.116, see the List of Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§571.117 Standard No. 117; Retreaded pneumatic tires.

S1. *Scope*. This standard specifies performance, labeling, and certification requirements for retreaded pneumatic passenger car tires.

S2. *Purpose*. The purpose of this standard is to require retreaded pneumatic passenger car tires to meet safety criteria similar to those for new pneumatic passenger car tires.

S3. *Application*. This standard applies to retreaded pneumatic tires for use on passenger cars manufactured after 1948.

S4. *Definitions*.

S4.1 *Casing* means a used tire to which additional tread may be attached for the purpose of retreading.

Retreaded means manufactured by a process in which a tread is attached to a casing.

S4.2 All terms defined in §§ 571.109 and 571.110 are used as defined therein.

S5. *Requirements.*

S5.1 *Retreaded tires.*

S5.1.1 Except as specified in S5.1.3, each retreaded tire, when mounted on a test rim of the width specified for the tire's size designation in appendix A of § 571.109 shall comply with the following requirements of § 571.109:

(a) S4.1 (Size and construction).

(b) S4.2.1 (General).

(c) S4.2.2.3 (Tubeless tire resistance to bead unseating).

(d) S4.2.2.4 (Tire strength).

S5.1.2 Except as specified in S5.1.3, each retreaded tire, when mounted on a test rim of the width specified for the tire's size designation in appendix A of § 571.109, shall comply with the requirements of S4.2.2.2 of § 571.109, except that the tire's section width shall not be more than 110 percent of the section width specified, and the tire's size factor shall be at least 97 percent of the size factor specified, in appendix A of § 571.109 for the tire's size designation.

S5.1.3 Each retreaded tire shall be capable of meeting the requirements of S5.1.1 and S5.1.2 when mounted on any rim in accordance with those sections.

S5.1.4 No retreaded tire shall have a size designation, recommended maximum load rating, or maximum permissible inflation pressure that is greater than that originally specified on the casing pursuant to S4.3 of § 571.109, or specified for the casing in Table I.

S5.2 *Casings.*

S5.2.1 No retreaded tire shall be manufactured with a casing—

(a) On which bead wire or cord fabric is exposed before processing.

(b) On which any cord fabric is exposed during processing, except that cord fabric that is located at a splice, i.e., where two or more segments of the same ply overlap, or cord fabric that is part of the belt material, may be exposed but shall not be penetrated or removed to any extent whatsoever.

S5.2.2 No retreaded tire shall be manufactured with a casing—

(a) From which a belt or ply, or part thereof, is removed during processing; or

(b) On which a belt or ply, or part thereof, is added or replaced during processing.

S5.2.3 Each retreaded tire shall be manufactured with a casing that bears, permanently molded at the time of its original manufacture into or onto the tire sidewall, each of the following:

(a) The symbol DOT;

(b) The size of the tire; and

(c) The actual number of plies or ply rating.

S5.2.4 [Reserved]

S6. *Certification and labeling.*

S6.1 Each manufacturer of a retreaded tire shall certify that its product complies with this standard pursuant to Section 30115 of Title 49, United States Code, by labeling the tire with the symbol DOT in the location specified in section 574.5 of this chapter.

S6.2 [Reserved]

S6.3. *Labeling.* Each retreaded tire shall comply, according to the phase-in schedule specified in S7 of this standard, with the requirements of S5.5 and S5.5.1 of § 571.139.

S7. *Phase-In Schedule for labeling*

S7.1. *Tires retreaded on or after September 1, 2005 and before September 1, 2006.* For tires manufactured on or after September 1, 2005 and before September 1, 2006, the number of tires complying with S6.3 of this standard must be equal to not less than 40% of the retreader's production during that period.

S7.2. *Tires retreaded on or after September 1, 2006 and before September 1, 2007.* For tires manufactured on or after September 1, 2006 and before September 1, 2007, the number of tires complying with S6.3 of this standard must be equal to not less than 70% of the retreader's production during that period.

S7.3. *Tires retreaded on or after September 1, 2007*. Each tire must comply with S6.3 of this standard.

[37 FR 5952, Mar. 23, 1972, as amended at 37 FR 11775, June 14, 1972; 38 FR 2982, Jan. 31, 1973; 38 FR 6999, Mar. 15, 1973; 38 FR 9688, Apr. 19, 1973; 39 FR 1443, Jan. 9, 1974; 39 FR 3553, Jan. 28, 1974; 39 FR 36016, Oct. 7, 1974; 39 FR 39884, Nov. 12, 1974; 61 FR 29494, June 11, 1996; 63 FR 28920, May 27, 1998; 67 FR 69627, Nov. 18, 2002; 69 FR 31319, June 3, 2004]

EDITORIAL NOTE: For an interpretation of §571.117, see 38 FR 10940, May 3, 1973.

§571.118 Standard No. 118; Power-operated window, partition, and roof panel systems.

S1. *Purpose and scope*. This standard specifies requirements for power operated window, partition, and roof panel systems to minimize the likelihood of death or injury from their accidental operation.

S2. *Application*. This standard applies to passenger cars, multipurpose passenger vehicles, and trucks with a gross vehicle weight rating of 4,536 kilograms or less. This standard's requirements for actuation devices, as provided in S6, need not be met for vehicles manufactured before October 1, 2008.

S3. *Definitions*.

Infrared reflectance means the ratio of the intensity of infrared light reflected and scattered by a flat sample of the test rod material to the intensity of infrared light reflected and scattered by a mirror that reflects 99.99 percent of the infrared radiation incident on its surface as measured by the apparatus show in Figure 2.

Power operated roof panel systems mean moveable panels in the vehicle roof which close by vehicle supplied power either by a sliding or hinged motion, and do not include convertible top systems.

S4. *Operating requirements*. Except as provided in S5, power operated window, partition, or roof panel systems may be closed only in the following circumstances:

(a) When the key that controls activation of the vehicle's engine is in the ''ON'', ''START'', or ''ACCESSORY'' position;

(b) By muscular force unassisted by vehicle supplied power;

(c) Upon continuous activation by a locking system on the exterior of the vehicle;

(d) Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 6 meters from the vehicle;

(e) During the interval between the time the locking device which controls the activation of the vehicle's engine is turned off and the opening of either of a two-door vehicle's doors or, in the case of a vehicle with more than two doors, the opening of either of its front doors;

(f) If the window, partition, or roof panel is in a static position before starting to close and in that position creates an opening so small that a 4 mm diameter semi-rigid cylindrical rod cannot be placed through the opening at any location around its edge in the manner described in S5(b); or

(g) Upon continuous activation of a remote actuation device, provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel if the device and the vehicle are separated by an opaque surface and provided that the remote actuation device shall be incapable of closing the power window, partition or roof panel from a distance of more than 11 meters from the vehicle.

S5. *Automatic reversal systems*. A power-operated window, partition, or roof panel system that is capable of closing or of being closed under any circumstances other than those specified in S4 shall meet the requirements of S5.1, S5.2, and, if applicable, S5.3.

S5.1. While closing, the power-operated window, partition, or roof panel shall stop and reverse direction either before contacting a test rod with properties described in S8.2 or S8.3, or before exerting a squeezing force of 100 newtons (N) or more on a semi-rigid cylindrical test rod with the properties described in S8.1, when such test rod is placed through the window, partition, or roof panel opening at any location in the manner described in the applicable test under S7.

S5.2. Upon reversal, the power-operated window, partition, or roof panel